

**Planetary Health Curriculum Integration: A Methodological Case Study of a Five-Step Process to Teach Climate Medicine at a US Medical School**

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## Abstract

**Purpose.** This methodological case study describes and evaluates a five-step iterative process—Review, Expand, Integrate, Synthesize, and Deploy—used to embed planetary health learning objectives (LOs) into the four-year undergraduate medical curriculum at the University of Colorado School of Medicine (CUSOM) between 2021 and 2024. We report on the process, implementation strategies, and preliminary student confidence data, to provide a transferable framework for other institutions pursuing similar curricular reforms.

**Methods.** We applied a structured five-step iterative process: (1) Review existing and external LOs; (2) Expand LOs to incorporate planetary health content; (3) Integrate revised content into lectures, clinical skills, team-based learning (TBL), and small groups; (4) Synthesize new content into a coherent curricular thread; and (5) Deploy and gather feedback. Integration strategies prioritized low curricular burden using existing infrastructure. A survey was distributed to second-year medical students following TBL implementation.

**Results.** Using this process, the team successfully implemented a longitudinal planetary health curriculum, including six new lectures, modified two didactic sessions, integrated planetary health content into six TBLs, revised two standardized patient cases, updated two small group sessions, and introduced a fourth-year Climate and Health Selective. In a post-TBL survey ( $n = 169$  of 216 second-year students; response rate 78%), 55% of respondents reported feeling mostly or completely confident in understanding how climate change affects patient health. Current data reflect perceived learning (Kirkpatrick Level 1–2a).

**Conclusions.** The five-step iterative process supported meaningful planetary health integration within a dense medical curriculum. Key enabling factors included student leadership, faculty partnership, and use of freely available resources. While these findings are grounded in CUSOM's distinctive institutional and geographic context, the process itself is designed to be adaptable across institutions. Future work will focus on objective knowledge assessment, faculty development, and alignment with national medical education standards.

**Keywords:** *planetary health, climate medicine, medical education, curriculum integration, case study, team-based learning*